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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,600	06/12/2001	Lawrence G. Roberts	60010-0012	5973

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HICKMAN PALERMO TRUONG & BECKER, LLP  
2055 GATEWAY PLACE  
SUITE 550  
SAN JOSE, CA 95110

EXAMINER

NG, CHRISTINE Y

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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11/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 09/880,600	<b>Applicant(s)</b> ROBERTS, LAWRENCE G.	
	<b>Examiner</b> Christine Ng	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23, 25, 26, 35, 37, 38, 59, 61, 62, 71, 73 and 74 is/are allowed.
- 6) ☒ Claim(s) 137-154, 161-165, 167, 168, 175-179, 181 and 182 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Continuation of Disposition of Claims: Claims pending in the application are 23,25,26,35,37,38,59,61,62,71,73,74,137-154,161-165,167,168,175-179,181 and 182.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 137-154, 161-165, 167, 175-179, and 181 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,775,230 to Watanabe et al in view of U.S. Patent No. 6,990,063 to Lenoski et al.

Referring to claims 137 and 140, Watanabe et al disclose in Figure 4 a method, implemented within a router (110) of a network, for recovering from a failure, comprising:

Sending (along path 312, 316, & 310) a first set of information from an ingress module (port 112) to a first egress module (port 120) for forwarding by said first egress module to a destination (storage 140) external to said router.

Detecting a failure of said first egress module (claim 137) / Detecting an external failure beyond said first egress module (claim 140). There can be failure of a port (Column 2, lines 13-16) or path failure 310 beyond port 120 (Column 5, lines 58-60).

In response to said failure of said first egress module / external failure, directing (from configuration table 130) a message to said *switch* informing said *switch* of said first egress module failure. In Figure 3 step 210, the switch checks the configuration

table 130 to see if the destination port of data frame has failed. Refer to Column 5, lines 28-37.

In response to said message, selecting an alternate egress module (port 122) capable of forwarding information to said destination. In Figure 3 step 212, the switch checks for alternate paths. Refer to Column 5, lines 37-39.

Sending a future set of information from said ingress module to said alternate egress module for forwarding to said destination. The path is switched from 312, 316, & 310 to 312, 316, 318, & 325. Refer to Column 5, line 56 to Column 6, line 2.

Wherein said first set of information and said future set of information are both part of a flow, wherein said first egress module and said alternate egress module are predetermined (by configuration table 130), wherein identifiers associated with said first egress module (port 120 is associated with identifier 3) and said alternate egress module (port 122 is associated with identifier 4) are stored within a flow block (configuration table 130) associated with said flow, and wherein selecting said alternate egress module comprises:

Accessing said flow block to access the identifier associated with said alternate egress module. When port 120 fails, the switch checks the configuration table 130 for an alternate port, which is predetermined since the switch, must choose an alternate port that belongs to the same path group as the failed port. The configuration table 130 is associated with each flow since the status of the ports can change for different flows. For example, Table 1 shows that port 3 has failed but Table 3 shows that port 3 is good. Refer to Column 4, lines 1-36; and Column 5, line 56 to Column 6, line 2.

Watanabe et al do not disclose that in response to said failure of said first egress module / external failure, directing a message to said *ingress module* informing said *ingress module* of said first egress module failure; and the *ingress module* selecting an alternate egress module capable of forwarding information to said destination.

Lenoski et al disclose in Figure 1 a packet switching system with a plurality of input line cards 101, input interfaces 105, output interfaces 125, and output line cards 131. The packet switching system detects faults and propagates indications of these faults to the input ports. The input ports maintains one or ore data structures to indicate the state of portions of the packet switching system and uses the data structures to identify which routes are currently available for reaching destinations of received packets. Refer to Column 2, line 50 to Column 3, line 9; Column 3, lines 27-46; and Column 8, line 13 to Column 10, line 9. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that in response to said failure of said first egress module / external failure, directing a message to said *ingress module* informing said *ingress module* of said first egress module failure; and the *ingress module* selecting an alternate egress module capable of forwarding information to said destination. One would have been motivated to do so so that the input ports can determine a new path for the packets instead of the switch, thereby load balancing the route determining function from the switch.

Referring to claims 138 and 141, Watanabe et al disclose in Figure 4 that in response to said message, preventing other sets of information associated with said flow from being sent from said ingress module (port 112) to said first egress module

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(port 120) by storing an indication (the status of port 3 is set to fail) in said flow block that all sets of information associated with said flow are not to be sent to said first egress module. Refer to Column 4, lines 1-36; and Column 5, line 56 to Column 6, line 2.

Referring to claims 139 and 142, Watanabe et al disclose in Figure 4 that in response to said message, causing other sets of information associated with said flow to be sent from said ingress module (port 112) to said alternate egress module (port 125) by storing an indication (the status of port 3 is set to fail and the status of port 4 is set to good, and port 3 and port 4 belong to the same path group A) in said flow block that all sets of information associated with said flow are to be sent to said alternate egress module. Refer to Column 4, lines 1-36; and Column 5, line 56 to Column 6, line 2.

Referring to claims 143 and 146, Watanabe et al disclose in Figure 4 a router (110) comprising an ingress module (port 112), a first egress module (port 120), an alternate egress module (port 122), and a forwarding mechanism (configuration table 130) for forwarding information between said ingress module, said first egress module, and said alternate egress module. Refer to the rejection of claims 137 and 140.

Referring to claims 144 and 147, refer to the rejection of claims 138 and 141.

Referring to claims 145 and 148, refer to the rejection of claims 139 and 142.

Referring to claims 149, 152, 161 and 175, Watanabe et al disclose in Figure 4 a method implemented by a *switch* (110), comprising:

Sending (along path 312, 316, & 310) a first set of information to a first egress module (port 120), said first set of information intended to be forward by the first egress module to a destination (storage 140) external to said router.

Receiving a message (from configuration table 130) indicating that said first set of information did not reach the destination successfully. In Figure 3 step 210, the switch checks the configuration table 130 to see if the destination port of data frame has failed. Refer to Column 5, lines 28-37.

Determining based upon said message whether future sets of information should be sent to the first egress module. There can be failure of a port (Column 2, lines 13-16) or path failure 310 beyond port 120 (Column 5, lines 58-60), so data needs to be rerouted.

In response to a determination that future sets of information should not be sent to the first egress module, selecting an alternate egress module (port 122) capable of forwarding information to the destination. In Figure 3 step 212, the switch checks for alternate paths. The path is switched from 312, 316, & 310 to 312, 316, 318, & 325. Refer to Column 5, lines 37-39; and Column 5, line 56 to Column 6, line 2.

Wherein said first set of information and said future set of information are both part of a flow, wherein said first egress module and said alternate egress module are predetermined (by configuration table 130), wherein identifiers associated with said first egress module (port 120 is associated with identifier 3) and said alternate egress module (port 122 is associated with identifier 4) are stored within a flow block



(configuration table 130) associated with said flow, and wherein selecting said alternate egress module comprises:

Accessing said flow block to access the identifier associated with said alternate egress module. When port 120 fails, the switch checks the configuration table 130 for an alternate port, which is predetermined since the switch, must choose an alternate port that belongs to the same path group as the failed port. The configuration table 130 is associated with each flow since the status of the ports can change for different flows. For example, Table 1 shows that port 3 has failed but Table 3 shows that port 3 is good. Refer to Column 4, lines 1-36; and Column 5, line 56 to Column 6, line 2.

Watanabe et al do not disclose that method is implemented by an *ingress module*, but instead discloses that the switch itself implements the method.

Lenoski et al disclose in Figure 1 a packet switching system with a plurality of input line cards 101, input interfaces 105, output interfaces 125, and output line cards 131. The packet switching system detects faults and propagates indications of these faults to the input ports. The input ports maintains one or more data structures to indicate the state of portions of the packet switching system and uses the data structures to identify which routes are currently available for reaching destinations of received packets. Refer to Column 2, line 50 to Column 3, line 9; Column 3, lines 27-46; and Column 8, line 13 to Column 10, line 9. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that method is implemented by an *ingress module*. One would have been motivated to do

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so so that the input ports can determine a new path for the packets instead of the switch, thereby load balancing the route determining function from the switch.

Referring to claims 150, 153, 162, 163, 176 and 177, refer to the rejection of claims 138 and 141.

Referring to claims 151, 154, 167, 164, 165, 178 and 179, refer to the rejection of claims 139 and 142.

Referring to claims 167 and 181, Watanabe et al disclose in Figure 4 wherein said first set of information comprises a data portion, and wherein the method comprises resending at least said data portion of said first set of information to the alternate egress module to be forwarded by the alternate egress module to the destination. The path for data transfer is switched from 312, 316, & 310 to 312, 316, 318, & 325. Refer to Column 5, line 56 to Column 6, line 2.

3. Claims 168 and 182 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,775,230 to Watanabe et al in view of U.S. Patent No. 6,990,063 to Lenoski et al, and in further view of U.S. Patent No. 6,272,107 to Rochberger et al.

Watanabe et al do not disclose wherein said message indicating that the first egress module failed comprises said data portion of said first set of information.

Rochberger et al disclose in Figure 22 that the message (restore\_loopback 386) indicating a break between transit nodes #1 and #2 in the system comprises a data portion (data 380). Refer to Column 17, lines 53-56 and Column 18, lines 21-26.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include wherein said message indicating that the first egress

module failed comprises said data portion of said first set of information. One would have been motivated to do so so that the data can be returned to the ingress module for rerouting to a new path.

***Allowable Subject Matter***

4. Claims 23, 25, 26, 35, 37, 38, 59, 61, 62, 71, 73 and 74 are allowed.

***Response to Arguments***

5. Applicant's arguments filed September 21, 2007 have been fully considered but they are not persuasive.

6. Referring to the argument that the Office Action fails to present a rejection for claim 140 (page 2, lines 5-9): The rejection of claim 140 was meant to be grouped with the rejection of claim 137 in the 3/14/2007 Office Action. Although the 3/14/2007 Office Action grouped claims 137 and 142 together, independent claims 137 and 140 are similar. The rejection of claims 137 and 142 in the 3/14/2007 Office Action also included the limitation of claim 140 of "Detecting an external failure being said first egress module". Furthermore, in the first line of paragraph 3 of the 3/14/2007 Office Action, it states that "Claims 137-154, 161-165, 167, 175-179, and 181 are rejected under 35 U.S.C. 103(a)...", thereby including claim 140 in the rejection.

7. Referring to the argument the Lenoski et al and Watanabe et al cannot be combined (page 1, line 7 to page 2, line 4): Lenoski et al disclose in Figure 1 a packet switching system with a plurality of input line cards 101, input interfaces 105, output interfaces 125, and output line cards 131. The packet switching system detects faults and propagates indications of these faults to the input ports. The input ports maintains

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one or more data structures to indicate the state of portions of the packet switching system and uses the data structures to identify which routes are currently available for reaching destinations of received packets. Refer to Column 2, line 50 to Column 3, line 9; and Column 3, lines 27-46. Even though Lenoski et al disclose a two-way communication between the input and output interfaces and Watanabe et al disclose only a one-way path between input and output ports, Lenoski et al teaches directing a message back to the input port to inform the input port of failures in the system, so that the input port can select an alternate path for the message. Although the input ports 112, 114 and 118 of Watanabe cannot store routing information, Lenoski et al offers the suggestion to allow these input ports to store routing information so that it can choose alternate paths for the system. This offers the improvement of load balancing the route determining function from the switch and giving it to the input ports.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C. Ng  
November 14, 2007



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